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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,096	08/05/2004	Benjamin Hodder	124-1082	3093

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EXAMINER	
QIN, JIANCHUN	
ART UNIT	**PAPER NUMBER**
2837	

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/501,096	HODDER ET AL.	
	Examiner	Art Unit	
	Jianchun Qin	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-18 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 7/09/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.

(b) CROSS-REFERENCE TO RELATED APPLICATIONS.

(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.

(d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or

REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a).

"Microfiche Appendices" were accepted by the Office until March 1, 2001.)

(e) BACKGROUND OF THE INVENTION.

(1) Field of the Invention.

(2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

(f) BRIEF SUMMARY OF THE INVENTION.

(g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).

(h) DETAILED DESCRIPTION OF THE INVENTION.

(i) CLAIM OR CLAIMS (commencing on a separate sheet).

(j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

(k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. Specifically, the specification of the disclosure is objected to because the BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S) is not in a section separate from the BRIEF SUMMARY OF THE INVENTION section and the DETAILED DESCRIPTION OF THE INVENTION section.

Appropriate correction is required.

Claim Objection

3. Claims 11 and 18 are objected to because of the following minor informalities:

Claim 11, line 5, after the word "fibre-laser", please change the double periods ".." into a single period --.--.

Claim 18, line 3, after the word "instrument", please add a period --.--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 3-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kersey et al. (U.S. Pat. No. 6285806) in view of Curtis et al. (U.S. Pat. No. 5237126).

With respect to claim 1:

Kersey et al. teach a sound detection system comprising: a fibre optic acoustic sensor (col. 3, lines 40-49); a source of electromagnetic radiation optically coupled to said fibre optic acoustic sensor and operable to input electromagnetic radiation to said fibre optic acoustic sensor (col. 3, lines 31-46); and an electromagnetic radiation

detector arranged to receive electromagnetic radiation output from said fibre optic acoustic sensor and operable to detect at least one property of said output electromagnetic radiation (cols. 3-4, lines 54-3); wherein said fibre optic acoustic sensor is responsive to sound and is operable to vary said at least one property of said input electromagnetic radiation in response to that sound in order to generate the output electromagnetic radiation said electromagnetic radiation detector being operable to detect variations in said at least one property of said output electromagnetic radiation indicative of this sound and to produce output signals in response thereto (col. 1, lines 13-18; col. 3, lines 46-49; cols. 3-4, lines 54-3) wherein said fibre optic acoustic sensor comprises a fibre laser acoustic sensor, comprising an optical fibre doped to provide a doped lasing volume, said fibre having two gratings provided in said doped volume, said fibre laser acoustic sensor being operable to vary a wavelengh of said input electromagnetic radiation in response to the sound, and said electromagnetic radiation detector being operable to detect variations in wavelength of said output electromagnetic radiation (cols. 3-4, lines 28-3; col. 5, lines 48-59).

Kersey et al. teach the system that includes the subject matter discussed above except said fibre optic acoustic sensor is responsive to sound generated by a musical instrument.

Curtis et al. teach a fibre optic acoustic sensor that is responsive to sound generated by a stringed musical instrument (col. 4, lines 62-68; col. 8, lines 28-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the invention of Kersey to detect sound from a stringed

musical instrument as taught by Curtis et al. in order to provide the stringed musical instrument with a sound pickup that has low noise, high sensitivity and wide frequency bandwidth (Curtis et al., col. 2, lines 29-56).

With respect to claims 3-5, 9 and 10:

Kersey et al. teach the sound detection system that includes the subject matter discussed above. Kersey et al. do not mention expressly: regarding claim 3, said fibre optic acoustic sensor comprises attachment means for attachment to a musical instrument; regarding claim 4, said musical instrument is a stringed musical instrument; regarding claim 5, said attachment means are for attachment across the sound hole, to the bridge, body, acoustic chamber or the soundboard of said stringed musical instrument; regarding claim 9, said fibre optic acoustic sensor or sensors are arranged to receive sound generated by said musical instrument; regarding claim 10, said musical instrument is a solid bodied guitar.

Curtis et al. a fibre optic acoustic sensor that receives sound generated by by a stringed musical instrument (col. 4, lines 62-68; col. 8, lines 28-29); wherein said fibre optic acoustic sensor comprises attachment means for attachment to a musical instrument (cols. 4-5, lines 62-9; col. 5, lines 18-35); wherein said musical instrument is a stringed musical instrument (col. 4, lines 53-61); wherein said attachment means are for attachment across the sound hole, to the bridge, body, acoustic chamber or the soundboard of said stringed musical instrument (cols. 4-5, lines 62-9; col. 5, lines 18-35); wherein said fibre optic acoustic sensor or sensors are arranged to receive sound

generated by said musical instrument (cols. 4-5, lines 62-9; col. 5, lines 18-35); wherein said musical instrument is a solid bodied guitar (col. 4, lines 53-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Curtis et al. in the invention of Kersey in order to provide the stringed musical instrument with a sound detector that has low noise, high sensitivity and wide frequency bandwidth (Curtis et al., col. 2, lines 29-56).

With respect to claims 6-8:

The teaching of Kersey et al. further includes: said system further comprising a plurality of fibre optic acoustic sensors, said plurality of fibre optic sensors being arranged in series such that electromagnetic radiation from said source passes through each of said sensors in turn (col. 3, lines 40-49); wherein said plurality of fibre optic acoustic sensors are arranged in series along an optical fibre, the distance between respective sensors being such that individual fibre optic sensors may be arranged on different musical instruments with optical fibre connecting said plurality of sensors (col. 3, lines 40-49); and said musical instrument sound detection system further comprising a signal processor operable to process said output signals received from said electromagnetic radiation detector and to produce acoustic signals that are compatible with a conventional amplifier and/or sound recording system therefrom (cols. 3-4, lines 64-35).

With respect to claim 11:

Kersey et al. teach a method of detecting sound comprising the steps of: (i) arranging a fibre optic acoustic sensor to receive sound generated by a sound

generator, the sensor comprising a fibre-laser (col. 2, lines 29-56; col. 3, lines 40-49; col. 5, lines 62-66); (ii) detecting variations in the output wavelength of the fibre-laser (cols. 3-4, lines 28-3; col. 5, lines 48-59).

Kersey et al. do not mention expressly: said sound is generated by a musical instrument.

Curtis et al. teach a fibre optic acoustic sensor that is responsive to sound generated by a stringed musical instrument (col. 4, lines 62-68; col. 8, lines 28-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the invention of Kersey to detect sound from a stringed musical instrument as taught by Curtis et al. in order to provide the stringed musical instrument with a sound pickup that has low noise, high sensitivity and wide frequency bandwidth (Curtis et al., col. 2, lines 29-56).

With respect to claims 12-16:

Kersey et al. teach the method that includes the subject matter discussed above. Kersey et al. do not mention expressly: regarding claim 12, step(i) of said method comprises attaching said fibre optic acoustic sensor to said at least one musical instrument; regarding claim 13, said musical instrument is a stringed musical instrument; regarding claim 14, said fibre optic acoustic sensor is attached to the bridge of said stringed instrument; regarding claim 15, said fibre optic acoustic sensor is attached to the soundboard or body of said stringed instrument; regarding claim 16, said fibre optic acoustic sensor is attached between the sound board and the bridge of said stringed instrument.

Curtis et al. teach a fibre optic acoustic sensor that is responsive to sound generated by a stringed musical instrument (col. 4, lines 62-68; col. 8, lines 28-29), including: attaching said fibre optic acoustic sensor to said at least one musical instrument (cols. 4-5, lines 62-9; col. 5, lines 18-35); said musical instrument is a stringed musical instrument (col. 2, lines 29-56; col. 5, lines 62-66); said fibre optic acoustic sensor is attached to the bridge of said stringed instrument (col. 2, lines 29-56; col. 5, lines 62-66); said fibre optic acoustic sensor is attached to the soundboard or body of said stringed instrument (cols. 5-6, lines 67-2); and said fibre optic acoustic sensor is attached between the sound board and the bridge of said stringed instrument (col. 5, lines 18-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Curtis et al. in the invention of Kersey in order to provide the stringed musical instrument with a sound detector that has low noise, high sensitivity and wide frequency bandwidth (Curtis et al., col. 2, lines 29-56).

With respect to claim 17:

The teaching of Kersey et al. further includes: processing said output signals to produce acoustic signals that are compatible with a conventional amplifier and/or sound recording system (cols. 3-4, lines 64-35).

With respect to claim 18:

Kersey et al. teach the use of a fibre optic acoustic sensor comprising a fibre-laser to detect the sound generated by at least one sound generator (col. 3, lines 28-49).

Kersey et al. do not mention expressly: said fibre optic acoustic sensor is used within a musical instrument sound detection system to detect sound generated by said musical instrument.

Curtis et al. teach a fibre optic acoustic sensor that is used in a stringed musical instrument to detect sound generated by said stringed musical instrument (col. 4, lines 62-68; col. 8, lines 28-29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to apply the invention of Kersey to detect sound from a stringed musical instrument as taught by Curtis et al. in order to provide the stringed musical instrument with a sound pickup that has low noise, high sensitivity and wide frequency bandwidth (Curtis et al., col. 2, lines 29-56).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kersey et al. in view of Curtis et al., as applied to claim 1 above, and further in view of Lagakos et al. (U.S. Pat. No. 5367376).

Kersey et al. and Curtis et al. teach the system that includes the subject matter discussed above except said optical fibre is coated with polyurethane.

Lagakos et al. teach a fibre optic acoustic sensor, wherein said optical fibre is coated with polyurethane (col. 8, lines 3-23 and col. 9, lines 3-14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the teaching of Lagakos et al. in the combination of Kersey et al. and Curtis et al. in order to the sensor construction easy and cost effective (Lagakos et al., col. 8, lines 3-22).

Prior Art Citations

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Bowley (U. S. Pat. No. 4442750) is entitled "Fiber optic musical instruments".

2) Carome (U. S. Pat. No. 4235113) is entitled "Optical fiber acoustical sensors".

Contact Information

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianchun Qin whose telephone number is (571) 272-5981. The examiner can normally be reached on 8:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jianchun Qin
Examiner
Art Unit 2837

JQ
January 5, 2006

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